

JAN-2024

**BLDE (DEEMED TO BE UNIVERSITY)**

**B.Sc. in Biotechnology**

[Time: 3 Hours]

[Max. Marks: 80]

**VI SEMESTER**

**PAPER - I (Animal Biotechnology)**

**QP CODE: 8675**

Your answer should be specific to the questions asked.  
Write Question No. in left side of margin.

**Long Questions**

**10X1 = 10 Marks**

1. What are stem cells and its applications

**Short Essays: (Any – 8)**

**5 X 8 = 40 Marks**

2. Human genome project
3. What are the advantages of retrovirus mediated gene transfer
4. Foot-and mouth disease in cattle
5. Explain Artificial insemination
6. What is the male sex hormone and its role
7. Explain process of animal cloning
8. Explain gene therapy
9. Application of biotechnology in curing animal disease
10. Down syndrome

**Short Answers: (Any – 10)**

**3 X 10 = 30 Marks**

11. Gene gun
12. Explain oxytocin and its role
13. Coccidiosis in cattle, sheep
14. Importance of retroviruses in gene technology?
15. Advantages of embryo transfer (ET)
16. Pluripotency
17. Trypanosomiasis cattle
18. Blastocyst
19. Types of animal propagation
20. Disadvantages of gene Therapy
21. Types of reproduction

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**VI SEMESTER**

**PAPER - II (Genomics & Proteomics)**

**QP CODE: 8676**

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

**Long Questions**

**10X1 = 10 Marks**

1. Discuss in detail Human genome project

**Short Essays: (Any – 8)**

**5 X 8 = 40 Marks**

2. Explain Expressed Sequence Tags (ESTs).
3. Shot-gun approach of sequencing
4. PAGE in proteome analysis
5. Explain Sanger's dideoxy method for DNA sequencing
6. Elucidate the relationship between Genes and Proteins
7. What are SNPs? What are various methods used for detection of SNPs?
8. Explain T-DNA and transposon tagging
9. Describe the genome organization within Chloroplast
10. Discuss Gene Knockdown technology.

**Short Answers: (Any – 10)**

**3 X 10 = 30 Marks**

11. SDS
12. C value Paradox
13. RFLP
14. Genome editing
15. Proteomics
16. Genome
17. Polymorphism.
18. DNA Chips
19. EST's
20. Transcription
21. Central Dogma of Molecular Biology

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**VI SEMESTER**

**PAPER - III (Industrial Biotechnology)**

**QP CODE: 8677**

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

**Long Questions**

**10X1 = 10 Marks**

1. What is fermentation? Write its application

**Short Essays: (Any – 8)**

**5 X 8 = 40 Marks**

2. Explain the production of ethanol through fermentation
3. Process of penicillin production
4. Importance of vitamins
5. Substrate used for mushroom cultivation
6. Types of bioreactors
7. Enzymatic method used for cell disruption
8. Raw material used for vitamin production
9. Commonly used microorganism for antibiotics production
10. Write in short about isolation of microorganism for fermentation

**Short Answers: (Any – 10)**

**3 X 10 = 30 Marks**

11. Define downstream processing
12. Sauerkraut
13. Types of metabolites isolated by downstream processing
14. Ascorbic acid
15. Define Bioprocess technology
16. Microorganism used for alcohol production
17. Recovery of vitamin production
18. Yogurt
19. Spawn
20. Recovery of penicillin from bioreactor
21. Carbon sources used for fermentation

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[Time: 3 Hours]

[Max. Marks: 80]

**VI SEMESTER**  
**PAPER - IV (Molecular Diagnostics)**  
**QP CODE: 8678**

Your answer should be specific to the questions asked.  
Write Question No. in left side of margin.

**Long Questions**

**10X1 = 10 Marks**

1. Write the principle, working and application of HPLC

**Short Essays: (Any – 8)**

**5 X 8 = 40 Marks**

2. Types of PCR
3. Write the short note on use of monoclonal antibodies in ELISA
4. Write the principle of flow cytometer
5. Explain the working procedure of PCR
6. Principle and application of GLC
7. Working procedure of ELISA
8. Write about Diffusion test procedures for microorganism
9. Application of RFLP
10. What is Radioimmunoassay (RIA)

**Short Answers: (Any – 10)**

**3 X 10 = 30 Marks**

11. What is Immuno blotting?
12. List the tests used for bactericidal activity
13. Single nucleotide polymorphism (SNP)
14. Anti-idiotypes and its type
15. Types of enzyme immunoassays
16. List DNA Sequencing techniques
17. Susceptibility tests
18. Structure of DNA
19. Application of idiotypes in diagnosis
20. Define the term 'nucleic acid amplification
21. Types of enzyme immunoassays